

Keeping the American Edge in Research Science and Engineering



Mitchell Feinberg

Smithtown High School East

Keeping the American Edge in Research Science and Engineering

“The well being of the world largely depends upon the work of the engineer. There is a great future and unlimited scope for the profession; new works of all kinds are and will be required in every country, and for a young man of imagination and keenness I cannot conceive a more attractive profession. Imagination is necessary as well as scientific knowledge,” affirmed the famous British engineer Sir William Halcrow. In a society such as the United States, which is a prominent world player in technology and innovation, the fields of research science and engineering in America propel our economy, and their respective discoveries transcend those of other nations. Although there is debate as to whether there is a shortage of engineers and research scientists in the United States, it is most important for us as a nation to continue graduating a multitude of students in this field. It is certainly our responsibility as a society at large to spark interest in research science and engineering through forms of media, through the educational system, and through personal experiences at home. I am enthusiastic towards science and am intrigued by the prospect of researching, discovering, learning, and taking part in making a difference in the world.

Research scientists and engineers are vital to the United States, accomplishing a variety of tasks, from curing diseases and creating vaccines to designing bridges and computers. The invention of the internet, which connects all the corners of the globe with a fast and efficient way of communicating and retrieving information, exemplifies the profound improvements on our lives that engineers bring about. Research scientists are also important in their ability to prevent global pandemics that have yet to occur, such as the bird flu. (Scientific Research and Development)

Although subject to debate, statistics show that the United States has an adequate amount of research scientists and engineers in our workforce, and there is no current crisis. Currently, the United States is only second to China in the number of students graduating with a bachelor's degree in engineering, and even so, only about ten percent of Chinese engineering graduates actually compete for outsourced work. The United States has 137,437 graduates, compared to 112,000 in India and 351,537 in China. Although China has a larger number of graduates, it is believed that students from the United States have a superior quality of training. (Clayton).

To prevent a calamity, there is a definite responsibility for the government, the educational community, and for families to continue to interest students and encourage them to pursue a profession in research science or engineering. To enhance the number of American researchers and engineers, the federal government should provide scholarships and various methods of financial assistance to students as well as financially supporting community colleges, which will increase the percent of students transferring to a university for a 4 year program. While other countries are becoming more and more enticing and welcoming to foreign students, the US will have to strengthen its domestic supply of students to compensate. (National Science Foundation) Additionally, children in grades K-12 should be exposed to the interesting and intriguing aspects of research science and engineering. "The Federal Government has a primary responsibility to lead the Nation in developing and implementing a coordinated, effective response to our long-term needs for science and engineering skills. US global leadership and future prosperity and security depend on meeting this challenge" (National Science Foundation, 2003)

It should also be the concern of parents with young children to foster an environment that excites their children about the research sciences. East Asian or Indian parents generally provide

a strong source of motivation for academic excellence that is rooted in their native culture, and this should serve as an example for all families to emulate. (North Central Regional Educational Laboratory) I believe I am a good example of someone who has become genuinely interested about science, and my great fascination in research science has been sparked by the positive influence from my parents. When I was as young as two years old, my parents introduced me to educational toys, such as scientific games and various car and robot building kits. Instead of watching television or playing a Game Boy, I read books and learned about the different sciences. At the present time, I have a strong passion for the research sciences, and I envision a career for myself in these fascinating fields.

The people of the present generation and of future generations are critical to the continued technological and scientific prosperity of the United States. While the current research scientists and engineers in our workforce amply support our economy and vast medical knowledge, the flow of people into these fields must continue to grow along with other nations. To make this possible, encouragement and support for the sciences from the government, the educators, and at home is needed. Despite domestic and foreign budget constraints, the United States government must continue its support for funding the growth of research science and engineering. The future of billions of people depends upon the continued breakthroughs unearthed by the determination of the research scientists and engineers in the United States.

Bibliography

Clayton, Mark. "Does the US face a science and engineering gap?" The Christian Science Monitor. 20 Dec 2005. Staff Writer. 29 Jan. 2006 <<http://www.csmonitor.com/2005/p01s01-ussc.html>>.

National Science Foundation. The Science and Engineering Workforce: Realizing America's Potential. Arlington: National Science Board, 2003.

"Scientific Research and Development." Research scientist (life science) in close-up. Graduate Prospects. 29 Jan. 2006
<http://www.prospects.ac.uk/cms/ShowPage/Home_page/Explore_types_of_jobs/Types_of_Job/p!eipaL?state=showocc&pageno=1&idno=277>.

"Why Are Asian-American Students Motivated to Achieve?" North Central Regional Educational Library. Learning Point. 26 Feb. 2006
<<http://www.ncrel.org/gap/library/text/whyare.htm>>.